

Patent
42478-6900

IN THE CLAIMS:

1. (Currently Amended) A radio base station for wirelessly connecting mobile stations in each time slot of a time division multiplex method by space-multiplexing a plurality of transmission signals having different directivity patterns of an adaptive array method,
- 5 the radio base station comprising:
- a storage means for storing a table showing how time slots are assigned ~~mobiles~~ to the mobile stations that are wirelessly connected;
- a measuring means for measuring a reception level of a signal received from each
- 10 mobile station shown in the table;
- a judging means for judging whether ~~[[a]]~~ the reception level is no less than a threshold value;
- a changing means for changing an assignment of the mobile stations and the table so that mobile stations which each have a reception level no less than the threshold value~~[[;]]~~
- 15 occupy a same time slot; and
- a control means for reducing a transmission power during a time slot, which is occupied by the mobile stations that each have a reception level no less than the threshold value, to a level that is lower than the transmission power of other time slots.

2. (Currently Amended) The radio base station of Claim 1,
- 20 wherein if ~~it is judged~~ the judging means judges that the reception level of any mobile station in the time slot, which is occupied by the mobile stations that each have a reception level no less than the threshold value, falls below the threshold value due to a

42478.6900/PRICE/IRV1465164

2

BEST AVAILABLE COPY

Patent
42478-6900

movement of the mobile station, the control means puts the transmission power, during the time slot, back to an original level.

3. (Previously Presented) The radio base station of Claim 1 further comprising:
- a signal processing unit for calculating a plurality of parameters used for space-
- 5 multiplexing, the plurality of sets of parameters respectively corresponding to a plurality of antennas composing an adaptive array antenna,
- wherein the measuring means includes:
- an electric field strength detecting means for detecting an electric field strength of a signal received in each time slot; and
- 10 a reception level detecting means for detecting a reception level of a signal received from each mobile station, which is space multiplexed in each time slot according to the detected electric field strength and the calculated plurality of sets of parameters.

4. (Original) The radio base station of Claim 1,
- wherein the control means changes a frequency during the time slot occupied by
- 15 the mobile stations that each have a reception level no less than the threshold value to a frequency used for a low-power transmission.

5. (Previously Presented) The radio base station of one of claim 2 and further comprising:
- a signal processing unit for calculating a plurality of parameters used for space-
- 20 multiplexing, the plurality of sets of parameters respectively corresponding to a plurality of antennas composing an adaptive array antenna,
- wherein the measuring means includes:

42478-6900-PRCZARV463164

3

BEST AVAILABLE COPY

Patent
42478-6900

an electric field strength detecting means for detecting an electric field strength of
a signal received in each time slot; and

a reception level detecting means for detecting a reception level of a signal
received from each mobile station, which is space multiplexed in each time slot according to the
5 detected electric field strength and the calculated plurality of sets of parameters.

6-14. (Cancelled)

15. (Currently Amended) A wireless network comprising:

a plurality of mobile stations with time division multiple access (TDMA)
capability; and

10 a base station comprising:

a radio capable of communicating with the plurality of mobile stations;

an antenna array electrically connected to the radio for transmitting and receiving
radio waves;

an electric field detecting unit that detects an electric field strength at the radio;

15 a signal processing unit that uses the electric field strength to process signals from
the radio and determine a signal level for each of the plurality of mobile stations;

an access control unit that assigns each of the plurality of mobile stations to a time
slot based on its signal level, wherein the access control unit assigns more than one mobile radio
to a single time slot; and

20 a transmission power control unit that adjusts transmission power based on the
signal level of the mobile radio assigned to the time slot and wherein the transmission power

Patent
42478-6900

control unit adjusts transmission power based on the lowest signal level assigned to the single
time slot.

16-17. (Cancelled)

42478.6900PRICEAIRV465164

5

BEST AVAILABLE COPY